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UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

Project	Date	Author

TITLE

REPORT OF PINE BEETLE SURVEYS

IN THE

GOLDENDALE INFESTATION AREA,
KLICKITAT COUNTY, WASHINGTON

SEASON OF 1942

By

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Bureau of Entomology and Plant Quarantine

April 1943

Forest Insect Laboratory
445 U. S. Court House
Portland, Oregon

SUBJECT—

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REPORT OF PINE BEETLE SURVEYS
IN THE
GOLDENDALE INFESTATION AREA, KLICKITAT COUNTY, WASHINGTON
SEASON OF 1942

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April 1943

ABSTRACT

A. The 1941 Infestation (Complete Record)

1. Primary insect- Western pine beetle in ponderosa pine
2. Estimated gross pine mortality for 1941 -

No. Trees	Volume (BM)	Volume Per Acre	Percent of Stand
8,000	4,800,000	50	0.7

3. Classification of Infestation - Normal endemic type west of the Goldendale-Toppenish highway and moderate epidemic type east of this road.

4. Trend of Infestation - Since the peak in 1940 the trend has been steadily downward.

B. The 1942 Infestation (Partial Record)

1. Primary insect -Western pine beetle in ponderosa pine
2. Probable trend -Downward from the 1941 level
3. Recommendations-Continued cutting in the stands east of the Goldendale-Toppenish highway.

REPORT OF PINE BEETLE SURVEYS
GOLDENDALE INFESTATION AREA, KLICKITAT COUNTY, WASHINGTON
SEASON OF 1942

The eighth pine beetle survey in the ponderosa pine stands forming the Goldendale Infestation Area was completed during the period of October 14-15, 1942. The writer, assisted by Messrs. C. M. Beil and R. M. Hddson from the Supervisors office of the Deshhutes National Forest, made a one hundred percent cruise of insect killed ponderosa pine on two 320-acre check plots, and in addition, made a ten percent cruise of the check plot green stand by the random quarter-acre circular plot method.

RESULTS OF THE SURVEY

The 1942 survey completed the loss record for 1941 and secured preliminary data for 1942. The gross 1941 plot losses averaged 41 board feet per acre or .5 percent of the stand (Table 1). These losses were 12 percent lower than those of 1940 and are probably typical of the conditions found in most of the area west of the Goldendale-Toppenish highway. However, east of this road, the 1941 losses in the remaining virgin stands are somewhat higher and represent a moderate epidemic infestation.

Tentative plot losses for 1942 (Table 1) are 57 percent lower than those of 1941 with approximately the same distribution of losses in the area as was noted in 1941.

Generalized estimates of the 1941 losses for the area as a whole including both virgin and cutover lands are given in Table 2. Approximately 50 board feet per acre or .7 percent of the stand were killed in this area last year. The accompanying map shows the general distribution of the 1941 losses. No area estimate for 1942 has been made as yet because there has been a considerable amount of cutting in portions of the area and corrected stand volume data, against which loss estimates are applied, are not now available.

Infestation Trends

The trend of western pine beetle losses on the virgin pine check plots of the Goldendale area is shown in Figure 2. It is evident from this chart that pine beetle losses have not followed a regular pattern in this area. They reached a fairly high level in 1940 and since then the trend has been downward, with the estimated 1942 mortality approaching the level of the previous low losses.

RECOMMENDATIONS

With logging operations now in progress on the portions of the area having the heaviest losses, the excessive wasteful depletion of ponderosa pine by the pine beetle in this area is being steadily corrected. It is recommended that, where possible, logging operations should continue to be concentrated in the stands adjoining the Goldendale-Toppenish highway. No other control measures are necessary at this time.

Table 1. Pine timber killed by barkbeetles on virgin check plots in 1941 and 1942 -- Goldendale Area, Klickitat County, Washington

Check Plot	Year	Ponderosa Pine Type		Gross Losses				
		Acres	Volume (BM)	No. of Trees	Volume (BM)			
					Total	Per Acre	Percent of Stand	Ratio to Previous Ye
Pipeline	1941	310	2,930,000	21	10,210	33	.34	.79
	1942*	310	2,930,000	8	3,000	10	.10	.30
Grayback	1941	320	2,360,000	22	15,430	48	.65	.95
	1942*	320	2,360,000	11	8,000	25	.34	.52
Plot Total	1941	630	5,290,000	43	25,640	41	.49	.88
	1942*	630	5,290,000	19	11,000	17	.21	.43

* 1942 losses have been estimated from partially completed survey data.

Table 2. Estimated insect-caused mortality of ponderosa pine in 1941 -- Goldendale Area, Klickitat County, Washington

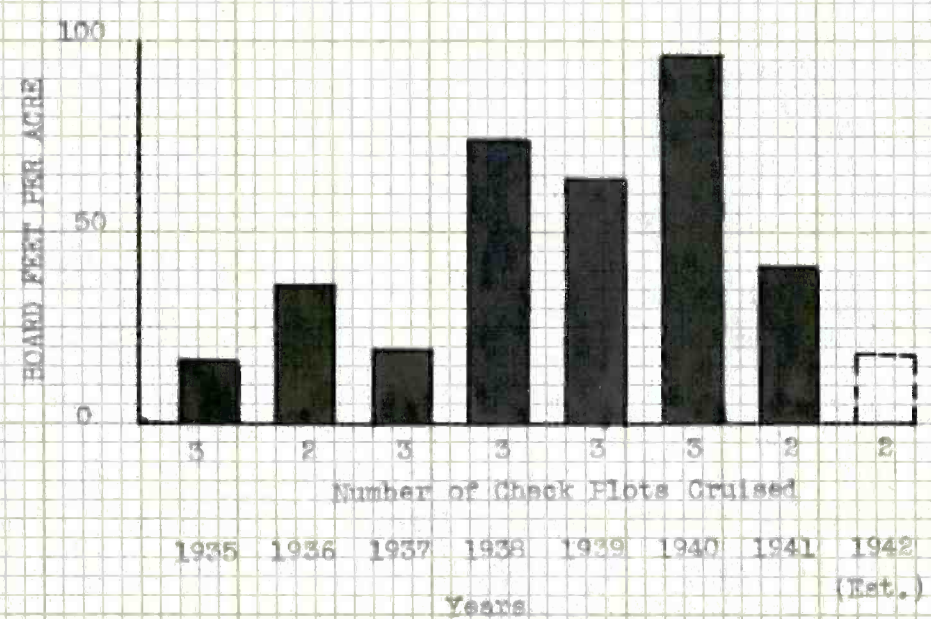
Area	Ponderosa Pine Type		Estimated 1941 Gross Losses				
			Trees		Volume (MBM)		
	Acres	Volume (MBM)	Total	Per Section	Total	BM Per Acre	Percent of Stand
Goldendale	96,000	700,000	8,000	50	4,800	50	.7

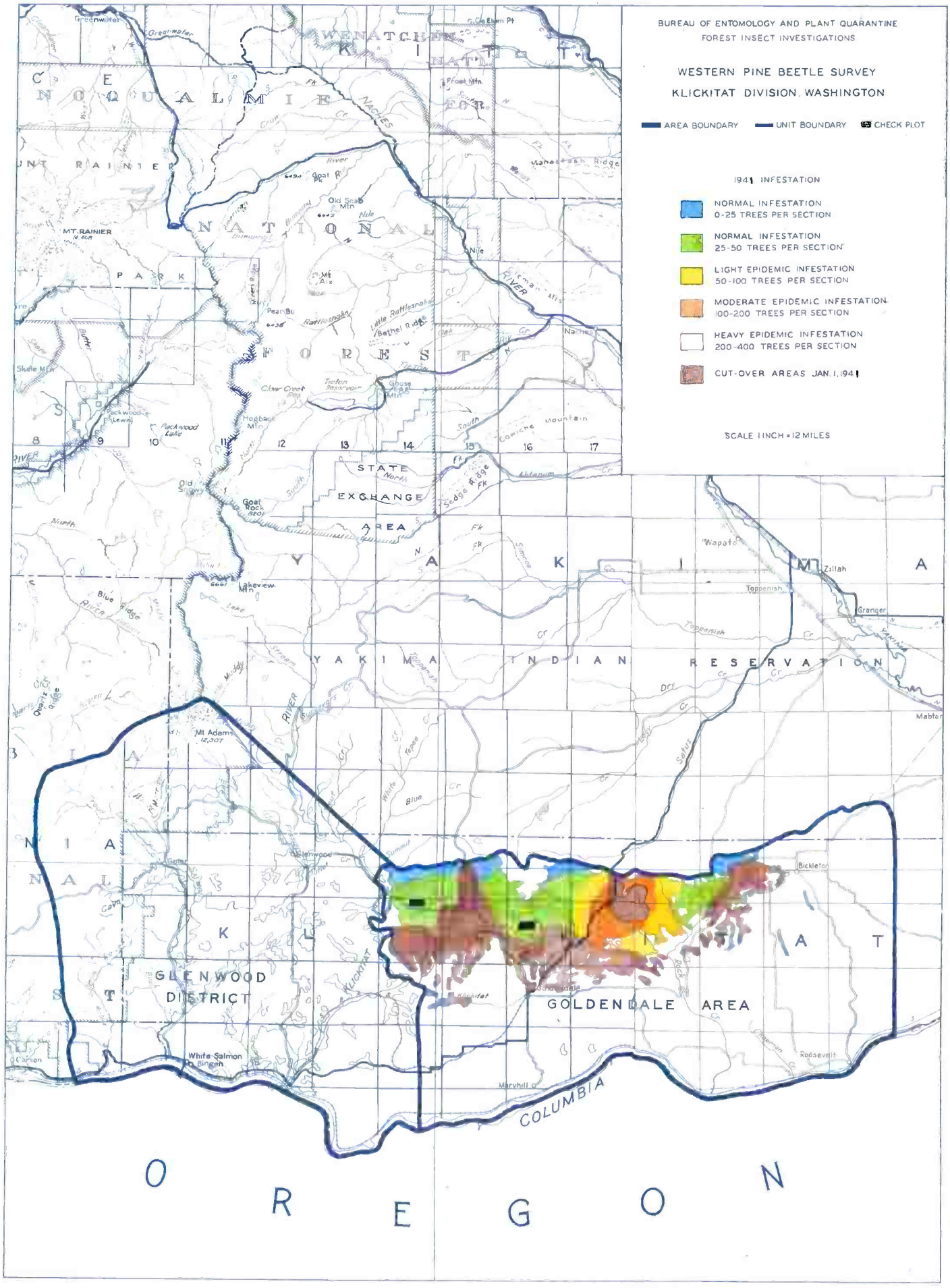
FIGURE 2

TREND OF GROSS WESTERN PINE BEETLE LOSSES

ON SURVEY CHECK PLOTS

GOLDENDALE INFESTATION AREA, KLICKITAT COUNTY, WASHINGTON




BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE
FOREST INSECT INVESTIGATIONS
WESTERN PINE BEETLE SURVEY
KLICKITAT DIVISION, WASHINGTON
AREA BOUNDARY
UNIT BOUNDARY
CHECK PLOT
1941 INFESTATION
NORMAL INFESTATION 0-25 TREES PER SECTION
NORMAL INFESTATION 25-50 TREES PER SECTION
LIGHT EPIDEMIC INFESTATION 50-100 TREES PER SECTION
MODERATE EPIDEMIC INFESTATION 100-200 TREES PER SECTION
HEAVY EPIDEMIC INFESTATION 200-400 TREES PER SECTION
CUT-OVER AREAS JAN. 1, 1941
SCALE 1 INCH = 12 MILES
MT. RAINIER NATIONAL PARK
STATE EXCHANGE AREA
YAKIMA INDIAN RESERVATION
GLENWOOD DISTRICT
GOLDENDALE AREA
COLUMBIA
OREGON
WASHINGTON